The Open Court.

A WEEKLY JOURNAL

Devoted to the Work of Conciliating Religion with Science.

Entered at the Chicago Post-Office as Second-Class Matter.

OFFICE, 169—175 LA SALLE STREET.

No. 95. Vol. III.—17. CHICAGO, JUNE 20, 1889. Two Dollars per Year. Single Copies, 10 cts.

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PUBLISHED EVERY THURSDAY BY

THE OPEN COURT PUBLISHING CO.

EDWARD C. HEGELER, PRESIDENT. DR. PAUL CARUS, EDITOR.

Throughout the Postal Union:

TERMS, $2.00 PER YEAR. $1.00 FOR SIX MONTHS.
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DEFINITIONS EXPLANATORY OF THE POSITION OF "THE OPEN COURT."

THE DATA of experience are perceptions.

REALITY is the sum total of all that is.

TRUTH is the conformity of cognition to reality.

[Truth being a relation between subject and object appears to be relative in its nature. Absolute truth is a self-contradiction; it would imply cognition without a cognizing subject.

At the same time it is obvious that absolute existence (in fact everything absolute) is impossible. Reality is properly called *Wirklichkeit* in German, derived from *wirken*, to take effect. Reality is not immovable and unchangeable absoluteness, but the effectiveness of things in their relations. Reality therefore implies not only existence, but the manifestation of existence also. Existence and its manifestation are not two different things; both are one.

The idea of something absolutely Unknowable is therefore also untenable; it would imply the existence of an object whose existence is not manifested *i. e.*, existence without reality; *Sein ohne Wirklichkeit*—which is a contradiction, an impossibility.]

SCIENCE is the search for truth.

The nature of science is the economy of thought. (*Mach.*)

Economy of thought is possible through application of the laws of form to thought.

KNOWLEDGE is the possession of certain truths.

[Knowledge is, so to say, the present stock or capital with which Science works. Science cannot exist without knowledge. The object of Science is not only to increase and enlarge knowledge but also to purify the present stock of knowledge from vagueness, errors, and misconceptions.

The purpose of knowledge is that of increasing our power over nature.]

MONISM is that philosophy which recognizes the oneness of All-existence, and the Religion of Monism teaches that the individual, as a part of the whole, has to conform to the cosmical laws of the All.

RELIGION is man's aspiration to be in harmony with the All.

[Religion has been defined differently in the columns of THE OPEN COURT, but all definitions that have been presented are in strict agreement. Mr. Hegeler in No. 25, defines Religion as "man's union with the All" (taking the definition from the Lutheran Catechism "Religion ist der Bund des Menschen mit Gott durch Gott," and replacing the Word GOD by the more comprehensive word THE ALL). The editor has defined Religion as "man's consciousness of his relation to the All" (No. 24); as "Das Allgefühl im Einzelnen," the All-feeling in the individual (see foot-note page 965); as "man's conception of the world that serves him as a guiding-star through life" (page 1180).]

MORALS are man's conduct in so far as it is in unison with the All.

[The basis of morality is religion. A moral educator or preacher may justly be asked, "On what authority dost thou justify thy precepts?" And he will tell us that his authority is not personal; he speaks in the name of universal order. Accordingly his authority is that of religion. If it were not so, all his good precepts would have no foundation; they would hover in the air like beautiful dreams that have no reality.]

ETHICS is the Science of Morals; it teaches man why he must, and how he can, regulate his conduct so as to be in unison with the All.

Natural history and the history of mankind prove that here on earth a constant progress takes place developing ever higher forms of existence.

Morally good are those acts which are in harmony with the All, *i. e.*, those which enhance progress, and *morally bad* are those which are not in harmony with the All, *i. e.*, those which retard or prevent progress.

[Religion (man's aspiration to be in unison with the All) has naturally produced many superstitious notions in the world, of its origin, and of its purpose. Similarly, science (man's search for truth) has produced many errors or false notions of reality. But all the superstitions of religion do not prove that religion as such is an illusion, and all the errors of science are no evidence that science as such is a sham.

It is obvious that religion and science, as here defined, are not contradictory to, but complementary of, each other. If religion and science do not agree, it is a certain sign that our conception of either the one or the other is wrong. The history of the human mind has been one of constant conflict and reconciliation between religion and science. Their relation has repeatedly been disturbed and re-adjusted.

The unitary conception of the world affords the only basis for the union of Religion and Science, and opens a new vista of progress for both.]

REVIEW OF RECENT WORK OF "THE OPEN COURT."

The work of THE OPEN COURT, for the past eight issues, covers a wide range of subjects. In an article in No 87, "The Universal Faith," Mr. T. B. WAKEMAN, of New York, discusses the foundations of a "monistic, positive, human, constructive religion." In the number preceding, an editorial essay points out and emphasizes the radical difference between religious Creeds and religious Faith. Then follow in Nos. 87, 88, and 89, respectively, the articles "Agnosticism and Auguste Comte's Positivism," "Space and Time," 'Formal Thought and Ethics." "Personality, Individuality, Consciousness," is the title of an essay (No. 87) by M. TH. RIBOT, the eminent French psychologist, translated with his consent from *Les Maladies de la Personnalité*. It contains the gist, one may say, of the principles from which modern psychology sets out. Dr. FELIX OSWALD contributes, in No. 88, a paper on "Dreams and Visions," an interesting study; and in No. 89, Mr. A. H. HEINEMANN writes effectively upon "The Preservation of Moral Purity in Children."

In criticism, appears the striking article from the French of ALFRED FOUILLÉE, entitled "M. GUYAU's Faith." The paper "The Transient and The Permanent in Theodore Parker" (No. 91), is Part I of a discourse held by Mr. MONCURE D. CONWAY at the dissolution of Mr. Parker's Society. Three articles (Nos. 90, 91, 92,) upon "The History of the People of Israel" are worthy of every reader's careful perusal. The author, Prof. CORNILL, is an orthodox theologian of Königsberg; his researches are marked by critical acumen, spirit, and above all a love of truth. A unique feature of the last few numbers is "The Sitaharanam," a translation from the Sanskrit, by Prof. ALBERT GUNLOGSEN.

In Economics, the controversy between "WHEELBARROW" and "SYMPATHIZER," Nos. 78, 85, 86, 88, occupies the first place. The subject is "Making Bread Dear." WHEELBARROW is well known to readers of THE OPEN COURT; SYMPATHIZER is a prominent Chicago citizen.

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ELECTRICAL WAVES AND RAYS.

THE EXPERIMENTS OF PROF. HERTZ.

BY THOMAS J. McCORMACK.

Of the various methods by which the transmission of energy is effected, that of wave motion plays, in physical procedure, perhaps the most prominent rôle. In this manner, the energy that constitutes light, heat, and sound is propagated. Physicists, in the former two instances, have assumed that there exists in the universe an all-pervading, tenuous, subtile, and imponderable medium called the ether. This ether, by hypothesis, is the vehicle of those forms of motion which are manifested as the physical phenomena of light and heat. The evidence for the existence of the ether, or luminiferous ether as it is sometimes called, is entirely cumulative. We have no direct proof of its presence. Tentative experiments, and the universal applicability to physical phenomena of the laws deduced from its assumed properties, have alone verified it. In fact, the theory that light is a form of wave motion, generated in the luminiferous ether, has only within the last century received universal recognition; and that heat is an undulatory movement of the same medium, has been admitted only within the last fifty years. At the present day, it is the working basis of optical and thermal science.

Recently the attention of physicists has been directed to numerous phenomena which point to the conclusion that the medium of electro-magnetic action is identical, in the properties it exhibits, with the luminiferous ether. Various researches had established the intimate connection between light and electricity; the old dualistic theory of two kinds of electrical substances had been definitively overthrown and the unitary doctrine of Franklin gained supremacy. But the latter was not theoretically developed, and the researches first mentioned were not comprehensive enough to command conviction. In 1858, Clerk Maxwell, following in the foot-steps of Faraday, who was the first to assume a medium in space as the vehicle of electrical and magnetic action, published his theory of electro-dynamic phenomena. Maxwell suggested the idea of a medium whose properties would account for the phenomena of light *as well as* the phenomena of electricity; in other words, the medium of electro-magnetic action was identified with the luminiferous ether. The theory was philosophical, and its capital merit lay in the fact that it tended to the unification of two great branches of physical science.

Until the recent researches of Prof. Hertz, of Carlsruhe, however, this theory had not been confirmed by direct experimental proof. In a series of communications addressed to the Berlin Academy, Prof. Hertz has established, with a remarkable degree of certitude, the hypotheses propounded by Maxwell. It may now be said, without fear of refutation, that in the province of electricity we have to deal with wave motions. We may now speak, with scientific propriety, of rays of electricity; showing that, in the same manner as light, they also are subject to the laws of reflection, refraction, and polarization.

It is the purpose of this paper to present, in brief, the results of Prof. Hertz's investigations.

I.

The main difficulty in the way of verifying by experiment the theory of Maxwell arose from the enormous velocity with which electrical disturbances are propagated. Electrical actions are perceptible only at a distance of a few metres from the conductors in which they originate. They traverse that distance in a few hundred millionths of a second. And it seemed impossible, by a mechanical contrivance, to generate electric phenomena under conditions that allowed the experimenter to follow, in so short a space of time, the phase and manner of their production. But Hertz found a means of exhibiting, in a visible manner, a difference of phase representing a space of time less than the thousandth part of a millionth of a second. This means was the electric spark. The contrivance used was that commonly employed in electrical experiments: a conductor interrupted at some point, the ends formed by the break being furnished with small knobs, between which the sparks dart. This contrivance may be called, in the description to follow, a spark-micrometer or spark-transit.

The arrangement, from which the office of the spark may be shown, is seen in Fig. 3. Near a primary closed circuit, containing an inductorium *A*, from which the current proceeds, is placed another circuit, a rectangle of wire, interrupted by the spark-

micrometer *M*. Let a point *e* in the second circuit be joined by a wire with a discharging-rod of the inductorium. Now the difference of electrical state between any two points in the first circuit by virtue of which electricity performs mechanical work in moving from the one point to the other—comparable to the flow of water from a higher to a lower level—is termed the difference of potential. This difference of potential, or difference of electrical state, is by the connection made transmitted in both directions towards the spark-micrometer *M*. If the point *e* is equidistant from the two knobs of the spark-micrometer, and both parts of the second circuit are symmetrical, the difference of potential will arrive at both knobs in the same *phase* and no sparks will pass between them. But upon moving the point *e* either to one side or the other, a sharp stream of sparks is excited in the micrometer; showing that the difference of potential requires more time, in one branch of the secondary circuit, to reach the micrometer than in the other, and that the phases of the difference of potential are, at the same moment of time, different in the two knobs. Now we know that the velocity of electric propagation in wires is 20–30 cm in the thousandth part of a millionth of a second. Consequently, this difference of phase must represent a space of time correspondingly short.

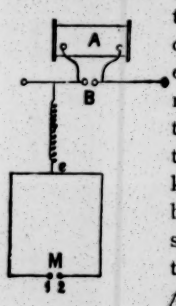

Fig. 3.

It may now be shown that the transmission of the difference of potential in the second circuit is effected by a wave-motion; in other words, that electromotive force—the supposed force to which transfer of electrical action is due—is propagated by undulations. If a wire or other body through which a current is passing, be brought in the neighborhood of another wire, the familiar phenomenon of induction occurs; namely, a second current is set up in the second wire. Here the first wire is termed the primary conductor; the second, the secondary conductor. Now, in Fig. 4, let the primary conductor consist of two rectangular plates of brass, *A* and *A'*, perpendicularly set and joined together by an horizontal copper wire 60 cm in length. In the middle of the wire let a break be made, across which sparks may pass. This break we will call the spark-transit, and let the terminal knobs, or poles, of the same be connected each with a pole of an inductorium. The straight line *rs*, perpendicular to the wire and passing horizontally through the spark-transit, may be known, in the phraseology of Hertz, as the basal line; the zero-point of which lies, say, 45 cm away from the spark-transit. The secondary conductor here, is the circle-shaped copper wire (rad. 35 cm) seen in the figure, which is likewise broken to form a spark-transit. Behind the plate *A* was placed a plate *P* of equal size, from which a copper wire 1 mm in thickness proceeds. This wire was bent, in the manner represented in Fig. 4, to a point *n*, lying some 30 cm above the basal line, whence it ran parallel with the latter. At a distance of 8 mm from the zero-point it was terminated. The secondary conductor was now carried towards the free end of the wire in a manner such that its plane passed through the same; whereupon a stream of sparks, extremely weak, was visible. The sparks increased in length however, when the conductor was moved towards the zero-point; attained at a certain spot their highest value, and afterwards grew smaller. The points at which they all but vanished were situated approximately at an equal distance apart.

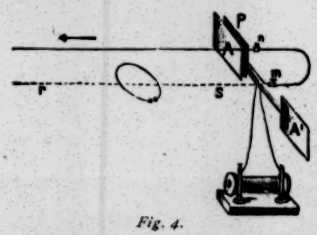

Fig. 4.

This phenomenon is hardly explainable otherwise than upon the hypothesis that the differences of potential existing at the origin of the wire, in the plate *P*, are propagated forward in the wire in the form of waves; so that at every point of the wire the potential varies between two extreme values, just as an ether particle, oscillating in a ray of light, executes vibrations about a position of equilibrium. Having arrived at the free end of the wire, the waves are thrown backwards, and by the intersection of the reversed waves with the original waves, permanent waves are formed with nodes and loops of vibration. The nodes of vibration are formed in the wire at the points where the sparks in the secondary conductor disappear.*

But the distance between two nodal points, or between two points where the disturbance is in the same phase, represents half a wave-length. A simple means, consequently, is afforded us of determining the length of a wave of electricity. This, in the present instance, Hertz found to be 2·8 m. The time of vibration and velocity of propagation also enters into consideration. From verified formulas Hertz deduced the value of both; the velocity of propagation was found to be in approximate agreement with the results obtained by other investigators.

A similar experiment, in proof of regular undulations, may be cited. Let the primary conductor *A A'* in Fig. 5 be conceived in a horizontal position. Facing the two knobs were arranged two metallic plates *a a*, from which two parallel wires proceeded, to a distance of 10–20 m. The observer took his position between the wires, so holding the secondary conductor *B* that its plane lay perpendicular to the two wires,

Naturw. Wochenschrift, IV. 1: Dr G. H. von Wyss.

and the break in the circuit uppermost. Starting from the extreme end of the wire, sparks several millimetres in length were observed. On coming nearer to the primary conductor, the sparks at once fell off and at a distance of 1·5 m from the end suddenly disappeared.

Fig. 5.

At a distance of 3 m, they reappeared, at 4·5 m they again vanished, and the phenomenon was periodically repeated at equal intervals. The same explanation will, as in the former case, account also for what happens here. The waves originating in the primary conductor are propagated to the end of the wire, where they are thrown back; the reflected and direct waves interfere and give rise to a system of fixed oscillations. (The nodes of vibration are marked in the figure by small crosses.) It is certain, therefore, that the primary conductor is the seat of isochronous oscillations, and that it sends forth regularly undulating waves.

In further support of the undulatory theory of electrical propagation, may be cited a well known phenomenon of accoustical science: the phenomenon of resonance. If a tuning-fork be brought in the neighborhood of a sounding-board capable of executing vibrations of exactly the same periodicity, the latter instrument will be set vibrating, and will produce a tone exactly the same as the original, and thus add to its intensity. Upon this analogy, Hertz reasoned that a current of uniform oscillation, under conditions otherwise the same, would have a much more powerful effect by way of induction upon a circuit of the same periodicity of vibration, than upon one whose periodicity differred, be it, by only a slight amount. His experiments to establish this were successful. By altering the capacity or the potential either of the primary or the secondary conductor, the sparks produced in the latter were, as the case might be, stronger or weaker; and they attained their greatest length, when the capacities and potentials were so adjusted that the times of vibration deduced from their values were equal for the main and secondary circuit. When, in Fig. 4, the secondary conductor was 'attuned' to the wire *mn*, that is, when the times of vibration of the two conductors were equal, the sparks evoked in the adjusted circuit were always more powerful than when the times of vibration did not accord.

II.

And now to the more recent experiments demonstrating the properties of electrical rays in space. In the description of apparatus and phenomena, we shall adhere, as closely as the limits of the article allow, to the text of Prof. Hertz's memoir: *Ueber Strahlen Electrischer Kraft.**

The propagation of electric waves in space, Hertz had already succeeded in establishing. His efforts were now directed towards confining the action of electrical radiation and thus making its effects perceptible at much greater distances. To this end the device of a large parabolic mirror, into the focal line of which the primary conductor should be placed, was hit upon. The misproportion between the dimensions of the mirror used and the wave-lengths first employed (4–5 m) resulted in the failure of the original experiments. Afterwards, shorter wave-lengths were selected (one-tenth the former) and the mirrors so adjusted that the results exceeded Hertz's highest expectations. The following explanation of the apparatus used, will be a sufficient introduction to the description of the phenomena to follow. (See Figs. 1, 2_a, and 2_b.)

The primary conductor consisted of a cylindrical piece of brass 3 cm in diameter and 26 cm in length, interrupted midway by the so-called spark-transit, the poles of which were spherical surfaces 2 cm in radius. The length of the conductor was thus nearly equal to the half wave-length of the corresponding vibration in straight wires. The polar surfaces had to be frequently polished during the experiment, and carefully protected from illumination caused by simultaneous lateral discharges; otherwise the oscillations fail. The discharge is carried to the two sections of the conductor by two wires overlaid with a thick gutta-percha covering, entering near the spark-transit on either side. A small inductorium of Keiser & Schmidt was used. With the latter instrument sparks of 1–2 cm in length could be generated; for the experiment the poles were brought together to a distance of 3 mm.

The proof of electrical force present in space was, as usual, shown by the production of sparks in a secondary conductor, for which a continuous circuit was used, having approximately the same time of vibration as the primary. The secondary conductor had a diameter of only 7·5 cm and was made of a copper wire 1 mm thick. One end of the wire bore a polished knob of brass of several millimeters diameter; the other end was pointed and by means of a delicate, insulated screw adjusted at a very short distance from the brass knob. The experimenter had to deal with sparks of several hundredths of a millimeter in length, so that brilliancy more than length was a guide to their presence.

The circular conductor is not adapted for attachment in the focal line of a concave mirror; accordingly

* *Annalen der Physik und Chemie.* New Series. Vol. XXXVI, pp. 769-783.

the following arrangement was principally employed. Two straight pieces of wire, 50 cm in length and 5 mm in diameter, were fixed in a straight line, with their adjacent ends about 5 cm apart. (See Figure 2 *b*.)* From these terminals, two wires, 15 cm long and 1 mm thick, ran parallel to each other, at right angles to the first mentioned wires, and led to a spark-transit, constructed like that in the circular conductor. This arrangement is preferable to one in which the spark-transit lies in the line of the straight wire; for in the latter case, in order to observe and adjust the spark-transit fixed in the focal line, the observer necessarily obstructs the opening of the mirror.

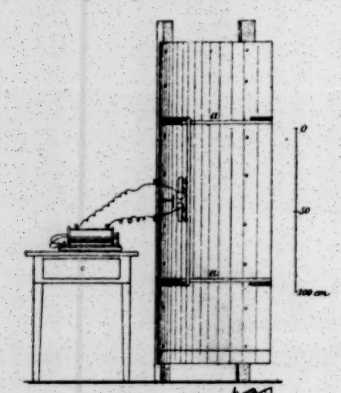

Fig 1

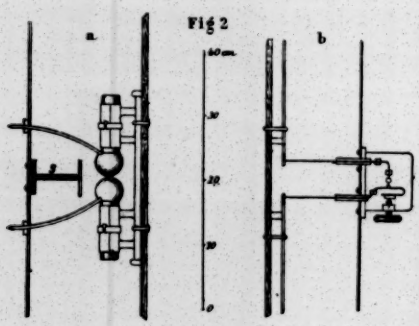

Fig 2

THE PRODUCTION OF ELECTRICAL RAYS.

Placing, now, the primary oscillator in the centre of a spacious and open apartment, Hertz began to explore the surrounding field with his circular conductor. The greatest distance within which sparks were evoked in the secondary conductor, was 1·5 m; under favorable condition of the primary spark-transit, 2 m. The effect in any one direction is increased, if on the opposite side of the primary oscillator a level conducting screen be placed, at the proper distance, parallel to the same. If the distance chosen is very small, or a little greater than 30 cm, the screen operates detrimentally; but accumulatively if at a distance of 8–15 cm; at a distance of 45 cm its cumulative effect is feeble; and at greater distances, zero. From this fact and results obtained in former investigations, Hertz concluded that the undulation in the air corresponding to the primary oscillation had a half wave-length of 30 cm.

An additional increase of intensity was predicted, upon substituting for the level screen a concave parabolic mirror, with the focal line of which the longitudinal axis of the primary oscillator is made to coincide. The focal distance of the mirror must be chosen as small as possible, if the effect at a remote point is to be well concentrated. But the focal distance must not be much smaller than one-fourth of a wave-length, lest the direct wave immediately neutralize the effect of the reflected one. A focal length of 12½ cm was accordingly chosen, and the concave mirror constructed of a sheet of zinc 2 m long, 2 m wide, and ½ mm thick, bent in the proper form, over a wooden frame of exact curvature. The height of the mirror was 2 m, the width of the opening 1·2 m, its depth 0·7 m. The primary oscillator was fixed in the middle of the focal line. The wires carrying the discharge passed through the mirror; the inductorium and elements were behind the same, offering no interference.

Upon exploring the vicinity of the oscillator with conductors, no effect was perceptible behind and sidewise from the mirror; in the direction of the optical axis, however, sparks were produced to distances of 5—6 m. For greater distances, as for 9—10 m, sparks were perceptible in the neighborhood of a level conducting screen which was placed at right angles to the forward traveling waves. Here the waves thrown

* DETAILED EXPLANATION OF APPARATUS.

Fig. 1 represents a transverse and vertical section of the emitting mirror. The stand is constructed of two horizontal braces, parabolic in form, and of four wooden uprights fastened with screws to the braces and constituting thus a support for the latter. The specular metal is forced in between the braces and the supports, and secured to the same by numerous screws. Above and below the uprights extend beyond the metal, to be used as handles in moving the stand about. Fig. 2 *a* represents, upon an enlarged scale, the arrangement of the primary conductor. The two metallic divisions slide tightly into envelopes of strong paper, which are kept closed by two elastic bands of rubber. The envelopes are further secured to a small strip of wood by four supports of sealing-wax; the strip being fastened by rubber bands to a wooden stay, also visible in Fig. 1. The rubber-covered conducting wires enter two holes bored in the knobs of the primary conductor. This arrangement affords the various parts the necessary flexibility, and can be taken apart in few moments, which is required by reason of the surfaces of the poles having to be frequently polished. At the points where the conducting wires pass through the mirror, they are invested during the discharges with a bluish light. To keep the latter as far as possible removed from the spark transit whose capacity of action is thereby considerably weakened, the screen *s*, constructed of smoothly planed wood, is placed between. Fig. 2 *b* represents the secondary spark-transit. The two sections of the secondary conductor are similarly fastened to a stay of the frame by supports of sealing-wax and rubber bands. From the inner terminal points of these sections, the rubber-covered conducting wires pass through the mirror and bend towards each other. The upper wire carries a small brass ball for a pole. To the lower wire a piece of a watch spring is soldered which carries the second pole, a fine copper point. This point is purposely selected of a softer metal than the ball; without this provision the point easily penetrates into the ball, and the tiny sparks are lost sight of in the hollow formed. It is seen from the cut how the movements of the point are regulated by a screw pressing upon the spring, but insulated from it by a small glass plate. The object of the peculiar bend of the spring is to regulate the movement of the point with more accuracy than could be done by the use of the screw alone.

back from the screen strengthened, at certain points, those directly approaching. At other points, conversely, the consequence of the meeting was to weaken the effect. With the straight conductor, in front of the screen, distinct *maxima* and *minima* were discoverable, and in the circular conductor phenomena of interference, characteristic marks of constant waves, were produced. Four nodal points, thus, were distinguished; one in the screen, and the others at distances respectively of 33, 65, and 98 cm from the same. Approximately, therefore, the value of the half wave-length of the waves employed in the experiment was 33 cm, and the time of vibration one one-thousandth-millionth of a second; assuming the velocity of light to be here the rate of propagation. These phenomena were discernible only in the neighborhood of the optical axis. Hertz accordingly called the physical formation thus produced, an electrical ray, emitted from the concave mirror.

A second mirror, exactly like the first, was now constructed, and the rectilinear secondary conductor was so placed in it, that its two (50 cm in length) wires fell in the focal line, while the wires leading to the spark-transit passed, insulated, through the wall of the mirror. The spark-transit was thus brought directly behind the mirror and the experimenter could arrange and observe it without interrupting the course of the waves. Hertz believed that if successful in catching the ray by this arrangement, he would be able to detect its presence at much greater distances. The result verified his belief. The sparks were perceptible from one end to the other of the laboratory in which the experiments were conducted. The greatest distance the ray was followed, was 16 m. For purposes of experiment, however, a distance of 6—10 m is the most convenient, since the sparks in the secondary conductor, beyond this distance, perceptibly weaken.

The simple phenomena, now to be described, characterize the action of an electrical ray. Where not otherwise indicated, the focal lines of the mirror are always taken to be vertically placed.

RECTILINEAR PROPAGATION.

When a screen of sheet-zinc 2 m high and 1 m wide was placed between the mirrors, in a plane perpendicular to the direction of the ray, the secondary sparks would completely disappear. A screen of tin-foil or gold-paper had the same effect. If a person comes into the line of the ray, darkness follows in the secondary spark-transit; passing out of the field of the same, the spark-transit again becomes luminous. Insulators do not intercept the ray. It passes through a screen of wood or a wooden door. The secondary oscillator and mirror were placed in an adjoining, closed room, and to Hertz's surprise sparks were in this instance also evoked in the secondary transit.

Two conducting screens, 2 m high and 1 m wide, were stationed symmetrically to the right and the left of the line of the ray, perpendicular to the same. So long as the space between the screens is not smaller than the aperture of the mirrors, viz., 1·2 m, the secondary sparks are not effected. If the intervening space be diminished, the sparks decrease in intensity and when the distance between the screens is made less than 0·5 m, disappear.

Leaving the width of the space 1·2 m, but moving the screens symmetrically sidewise from the line of junction of the mirrors, the sparks vanished as before. If the optical axis of the emitting mirror was turned 10° to the right or left of the proper position, the secondary sparks grew perceptibly weaker; upon turning the same 15°, they disappeared.

The ray, accordingly, has an exact geometrical boundary; the "shadows" have not. Phenomena were easily producible, which were analogous to those of diffraction. Hertz did not succeed in observing maxima and minima at the edge of the shadows.

* * *

The reflection, refraction, and polarization of electrical rays will be illustrated in a subsequent number.

YOUTH AND OLD AGE.*

BY FELIX L. OSWALD, M. D.

In the course of the last fifty years, biologists have repeatedly called attention to the curious fact that the growth of a human body from infancy to old age corresponds closely to the evolution of the human type from the lower forms of animal life.

A conclusive—perhaps, indeed, the most conclusive—argument in favor of Monism is the circumstance that the mind accompanies the body in almost every step of that progressive development. Nay, the slight divergence from the exact lines of the parallel is, in certain respects, more fatal to the delusions of mental dualism than the Darwinian theory is to the doctrine of special creation. A few years ago the physiologist Virchow was so far misled by the excitement of partisan controversy as to maintain that a large plurality of our dumb fellow creatures have no soul at all, and that only in the highest animals we can notice anything analogous to the phenomenon of a mental process. "For the benefit of a benighted world," remarks Karl Vogt, "the Herr Professor will perhaps condescend to explain at which precise stage of evolution that

* Copyrighted under "Body and Mind; or, The Data of Moral Physiology." Part XXIV.

mysterious entity, called a mind, suddenly enters the hitherto inanimate organism of a poor brute."

At which special period of growth, we might also ask, do our dualistic friends suppose their supernatural soul to have entered the tabernacle of the human body? There was a time when the nations of Europe, even on the shores of the Mediterranean, had scarcely emerged from the most brutish depth of barbarism, and when nevertheless their physical development could have furnished models for the chisel of a Phidias. It is equally certain that the mind of a child has not far advanced beyond the mental status of a cuttlefish at a time when its body already displays the essential characteristics of the human type. Of anything analogous to reason an infant of five or six months shows fewer glimpses than a newborn monkey or a newly hatched turkey-chick. One day after emerging from the shell of the egg young turkeys already stop their twittering cackle at the first warning of the parent bird, and at the approach of a hunter will scatter in all directions and manage to become invisible at half a minute's notice, crouching down flat under the projecting knob of a gnarled root or under a tuft of tangled weeds, and keeping absolutely still, till the rallying cry of the hen announces the departure of the enemy. Young monkeys will aid their mother in espying the first symptoms of danger and at once loosen their grip on her arms and cling closely around her waist when the sudden appearance of a panther gives the signal for a headlong flight through the tree-tops.

Young children, on the other hand, have to acquire the full use of their motive organs before their mind gives evidence of any decided advance above the level of a rather limited type of instinct; and it is a remarkable fact that the rapidly developing youngsters of certain savages show a corresponding degree of mental precocity. Bishop Heber and Mrs. Colin Mackenzie testify to the curious intelligence of Hindoo babies, who begin to prattle and take care of still younger infants at an age when an English child would be unable to crawl out of its cradle. The traveler Vambery speaks of a Turkestan girl of four years, who, in the absence of her parents, received a troop of strangers and asked them to excuse the scant accommodations of the little cabin, while she bustled about to collect the wherewithal of a breakfast; and Captain W. C. Baldwin (*African Hunting*, p. 224) mentions his experience with a still more precocious young Hottentot. "On the same day I was obliged to buy a little Massara boy," he says, "a toddling infant, certainly not more than *two* years old, whom a gang of native hunters had picked up in an abandoned camp. I could not bear the thought of leaving him to die of hunger and thirst in the desert, and his intelligence soon made me quite fond of him. * * * It was a sight to watch the waddling little brat come, armed with a stick twice as long as himself, to help me corral the oxen, and the way he toddled along to make the calf fast without my ever telling him! When my Kaffirs had left our camp, the poor little fellow slept at my feet, and somehow seemed to know that something was wrong, as he kept starting up and feeling for my knees, touching them with the greatest gentleness, and then lying down again."

After the sixth year the mental development of a child progresses with often astonishing rapidity, just as nations, unfettered by the trammels of priestcraft, are apt to rise rapidly from barbarism to a considerably advanced stage of civilization. Jean Jacques Rousseau justly remarks that it is far easier to civilize a healthy barbarian than to restore the lost health of an over-civilized nation, and the high state of culture attained by the conquering Saracens within less than a century after their exodus from the desert-camps of Araby, contrasts, indeed, strangely with the intellectual torpor of many once civilized races. But a still more curious fact is the general diffusion of intelligence among certain nations of pagan antiquity, who in industry and material resources were far behind many third-class powers of modern times. It would almost seem as if the very lack of industrial activity had left the Greeks of the classic era more leisure for abstract speculations, and a similar circumstance might partly explain the remarkable intelligence of care-free children. The smaller wants and less complicated social relations of childhood favor a greater distinctness of thoughts and feelings which in after years are dimmed by the gathering clouds of care. Business-worry is incompatible with day-dreams, and an American humorist is perhaps right that "Socrates would not have stood twenty-four hours wrapt in metaphysical abstractions, if he had been bothered with poll-taxes, municipal taxes, water-bills, gas-bills and contributions to the campaign-fund of half a dozen party candidates."

Another cause of intellectual precocity is found in the susceptible nervous organizations of childhood. "Dans l'enfance," says Bichat, (De la vie et de la mort, Art. 8, 6,) "le système nerveux, comparé au musculaire, est proportionnellement plus considérable que dans tous les âges suivans, tandis que, par la suite, la plupart des autres systèmes prédominent sur celui-ci." Hence the apparent paradox that intelligence often seems to decrease with the advance from childhood to puberty. "The mental capacity of the orang and other apes," says Cuvier, "is developed at a surprisingly early period of life, but reaches an equally early climax, or rather a turning-point, since it undoubtedly subsides during the ascendency of muscular force. The orang, in babyhood, astonishes every observer by its penetra-

tion, its cunning, and cleverness (son adresse), the adult orang is a stupid, brutal, and unmanageable beast."

The visitors of the Chimpanzee-house in the New York Central Park must have observed analogous facts; and those who deny a similar climax-period in the development of the human brain are apt to forget the difference between mental capacity and mental training. The high intelligence of the average Greek citizen in the age of Pericles would be rated still higher if we were to make allowance for the difference in the store of accumulated knowledge which our latter-day civilization has inherited as the bequest of every preceding age, and for similar reasons the intellectual capacities of childhood should be estimated in their relative, as well as in their direct, significance. A clever child in risking a controversy with a learned man has to contend with the same disadvantage that baffled the courage and strategy of the Circassian highlanders in their encounter with the rifle-armed Russians.

The receptive faculties of childhood manifest themselves in the rapidity of comprehension (greater aptitude in the acquisition of new languages, new doctrines, and arts), as well as in the fact that the mental tendencies of after years can generally be traced to the impressions of early youth. "The experiences of childhood," says Arthur Schopenhauer, "become, as it were, the types of our subsequent intellectual perceptions,—the categorical ideas under which we arrange our stores of theories and facts. Life amplifies, or slightly modifies, but almost never reverses, the verdict of dawning reason. In youth intelligence preponderates over the activities of volition. Hence, the bright, contemplative geniality in the expression of many young children—an expression so happily reproduced in the cherub-types of Guido and Raphael. * * * That plastic sensitiveness of the infant mind also explains the deep impressions left by the experiences of early childhood."

It has often been remarked that our impression on the first meeting with a new acquaintance is apt to be essentially correct, and the unbiased mental vision of childhood may for similar reasons be relied upon to arrive at conclusions more loyal to fact than the inferences of blue-spectacled erudition. In the light of that truth it is a significant circumstance that the philosophy of childhood is the extreme antithesis of monkish pessimism, and of the world-despising resignation which masks its turpitude with the appearance of saintly disinterestedness. Children are instinctive optimists. Their clearer vision recognizes health and happiness as the normal condition, disease and misery as abnormal discords, in the harmony of the universe, and their cheerful courage shames the sophistry of the whining world-renouncer who ascribes the results of his own decrepitude to the worthlessness of temporal existence.

That optimism is, however, compatible with a deep sympathy and an almost participative commiseration of real misfortune, and even with a keen appreciation of the charms of tragic poetry. It is a strange fact that the life loving Greeks were passionate worshipers of the tragic muse, while our canting pessimism seeks diversion in farces and burlesques; but a precisely analogous phenomenon is the elegiac tendency of gifted boys, who in after years may prefer the banter of Anacreon to the grandest pathos of Sophocles and Euripides. Byron in his boyhood often passed whole weeks in the solitude of the Scotch highland, "musing and brooding," as his biographer expresses it, or wandered about the waste fields of Newstead Abbey, misanthropy in his heart and a copy of Ossian in his coat-pocket. Twenty years after his friend Trelawney found him playing billiards and bandying bonmots with the gayety of a French dandy.

"'Now confess,' he said, 'you expected to find me a 'Timon of Athens,' or a 'Timur the Tartar,' and are you not mystified at finding me what I am—a man of the world—laughing at all things mundane?' Then he muttered, as to himself,—

'The world is a bundle of hay,
Mankind are the asses who pull.'

"His conversation was anything but literary, except when Shelley was with him. The character he most frequently appeared in, was of the free-and-easy sort and his talk was seasoned with anecdotes of the great actors on and off the stage, boxers, gamblers, duellists, etc., appropriately garnished with the slang and banter of the day."

Childe Harold had become a Don Juan; though the friends who knew him best hinted that his hidden melancholy had continued to grow deeper and that his ostentatious mirth was akin to the grim humor of despair, like that of Vanini, whose black locks turned white in the dungeon of the Inquisition, but who cast laments to the winds when he learned that petitions would be in vain, anyhow, and that the tribunal of Toulouse had already purchased the pitch and pine-wood for his stake. A radical change in the humor, if not in the philosophy, of the great British poet, is, however, indicated by the altered tone of his letters and dramas; he evidently had begun to seek in satire the consolation which he once sought in elegies.

The literary tendency of the poet-philosophers Voltaire and Gœthe underwent an analogous change: the recluse of Ferney indulged in ditties and burlesques, and the man whose youth had voiced its musings in Werther, cheered his old age in the rose-garden of Hafiz. The chief secret of such apparent anomalies is perhaps the charm of contrast, though misanthropists are apt to explain them on a theory of their own. "The chief drawback to the happiness of

youth," says Leopardi, "is dependence, while independence and definite escape from the shams and the meanness of society often cheer the gloom of old age."

"Men of genius," says Schopenhauer, "in youth often suffer from a feeling of solitude, and in after years, on the contrary, enjoy the consciousness of emancipation. The former feeling is founded on inexperience in the real character of our esteemed fellowmen, the second on the lessons of closer acquaintance. As a consequence, the second half of life, like the second part of a musical period, inspires less vague longings but more restfulness. * * * The sorrow of youth consists mainly in unsatisfied yearnings for an unattainable ideal of happiness, the sorrow of riper age in a dread of probable—but possibly avoidable—misfortunes. Freedom from positive trouble at last becomes the sole desire of a storm-tossed navigator of life's treacherous sea, whose perils enable him to enjoy the peace even of a humble harbor."

In the experience of a normally organized human being the period of love is preceded by a period of friendships—the earliest manifestation of that altruism which, next to constructiveness, has perhaps done most to insure the victory of our species over all varieties of our physically superior fellow creatures. Dogs, horses, and elephants, with all their affection for their helpless young, will see a distressed brother succumb to odds without as much as an audible symptom of concern. Wolves will often attack and rend a wounded comrade, while even the lowest species of our Darwinian kinsmen, the flat-nosed Brazilian capuchines, are thrown in the wildest excitement by the sight of a fellow-monkey's peril. At the alarm-cry of a wounded baboon all the members of his tribe, and often all the neighboring tribes of the four-handed commonwealth, will rush in, regardless of consequences, and in a contest with a well-armed hunter may thus frequently sacrifice their own lives without being able to avert the fate of their imperilled relative. But in a state of nature that brother-love has undoubtedly a tendency to promote the welfare of the species, and long before the dawn of religious altruism the cooperation of mutual friends may have insured the survival of our semi-human ancestors.

BOOK REVIEWS.

LOOKING BACKWARD.*

It is the wrong title. It should not have been Looking *Backward*, but much rather Looking *Forward!* For the book is really a look forward into a world as yet unseen and unknown, a future dreamland like Thomas More's Utopia which, nearly four hundred years ago, pictured a state in which, as in Bellamy's future society, every man is employed in some useful labor but no longer than six hours daily; and all have equal incomes and are content to be able to satisfy their daily wants; and where both indolence and covetousness are unknown. The age of steam and electricity would naturally cause the author of "Looking Backward" to expect and promise a little more than the scant satisfaction of the necessaries of life for the members of his new society, and to picture a condition of splendor and luxury in the public life of the future to which a parallel does not exist in this age of ours. There are in Bellamy's dreamland the greatest variety and plenty of entertainments and enjoyments of life, of social intercourse, traveling, the most elaborate means of education, of intellectual treats with lectures, sermons, newspapers, and libraries accessible to all equally, with musical and theatrical entertainments and, of course, all kinds of parties and hops open to every inhabitant of the land alike. Nevertheless, in all the throng, you do not meet the coarse and ignorant, the filthy and repulsive, because universal and compulsory education has done away with all coarseness and ignorance; and universal and uniform wealth has removed filth and offense of every kind. It is the millennium which the author describes, the "heaven on earth" which philosophy and prophesy have been looking forward to ever since man made his appearance on earth. The book is most emphatically a "looking forward," a look into a future of mankind as desirable as it has hitherto been pronounced inaccessible and impossible by all the wise men of the present age who make bold to thoroughly comprehend the nature of man, with his capabilities, his chances of development, and all the possibilities of the evolution of the race in times to come.

Bellamy's story tells us that Julian West, its hero, in 1887, when thirty years of age, was put into a trance sleep by a mesmerist who failed to recall him to life. In that trance he lay in a subterranean chamber until, one hundred and thirteen years, three months, and eleven days later, he was resuscitated from his lengthy sleep by Dr. Leete, a retired physician in New Boston, A. D., 2000. The doctor begins almost immediately to give to West an outline of the changes the city of Boston and the country at large have undergone during that long sleep. The nation had gradually succeeded in making the government absorb all the private business establishments, one after another, until the nation, or society, had finished by being the sole, or exclusive, proprietor of all means of production and distribution. That change accomplished, the state of society in 2000 is a follows:

The producers are the whole people, every citizen being obliged to labor. The nation is organized as an industrial army composed of grades, guilds, divisions, and departments, and commanded by officers, generals, etc., similar to the groups, and trades-unions of the socialists. Every citizen is, in 2000, attending public school until he is twenty-one years old. At that age he enters the first grade of the industrial army to serve three years as a common laborer. At the end of that time he may select a trade and enter an apprenticeship lasting one year. Or he may enter an industrial school if his talents are found to warrant such a step. The entire period of service in the industrial army extends to the forty-fifth year of life after which time the worker is pensioned and may spend the rest of his days as he likes.

According to the scheme of distribution, the shares of all citizens are alike, that is, each individual's share of the production of the nation is equal in amount to that of every other individual. As a set-off to this equality of distribution, society requires "precisely the same measure of productive service" from every man

* 2000–1887. By *Edward Bellamy*. Boston: Houghton, Mifflin & Co.

The book was noticed in a previous issue of THE OPEN COURT. But it is increasing in popularity and seems destined to achieve a deal of importance in the discussion of social questions now before the public. The Nationalist clubs which are rapidly spreading throughout the land, make the fanciful description of the new society contained in the book the foundation of their agitation. For such reasons it seems desirable that people should read the book and get acquainted with its principles. That is why a fuller notice of it is considered acceptable to such readers as are interested in the progress of social thought.

which means that each is required to "make the same effort, that is the best service in his power to give." All men who do their best, do equal service. For this reason there is an "invalid corps provided with light tasks fitted to their strength," every one of which is entitled to and receives a share of the production equal in amount to that of every other citizen. So, there is no room for charity.

Of the special advantages the scheme enumerates as prevalent in the new society of A. D. 2000, may be mentioned: the absence of crime, of law, and legislation and, consequently, of lawyers. There are, further, no more politicians. But the author holds tight to the physicians and the churches with preachers and sermons. Yet nobody need go to church: a touch upon the knob of a domestic telephone on Sunday morning will make the preacher's sermon audible in the family residence. And if you want to hear a concert, touch your telephone knob, and sit down in your rocking chair, and your room will resound with the choicest music.

To the inner life of woman in the society of A. D. 2000, the author devotes some of his best thoughts. He may be criticized for assuming "that the vacuum left in the minds of men and women by the absence of care for one's livelihood, has been entirely taken up by the tender passion," but he pictures a desirable ideal condition of society by saying that "there can be no marriage except those of inclination," and that the woman of the new age has "risen to the full height of her responsibility as the warden of the world to come, to whose keeping the keys of the future are confided. Her feeling of duty in this respect amounts to a sense of religious consecration." And further the author says the rule of marriage from love only "means that for the first time in human history the principle of sexual selection, with its tendency to preserve and transmit the better types of the race, and let the inferior type drop out, has unhindered operation * * * Every generation is sifted through a little finer mesh than the last. The attributes that human nature admires, are preserved, those that repel it, are left behind."

Space forbids to go deeper into the details of the attractive picture. Otherwise, mention might be made of how the author places the burden of the support of children upon the nation and, at the same time, preserves the integrity of the family; how he suggests a system of awards for public services free from the sordid lust of riches and personal aggrandizement, and how he imagines a satisfactory domestic economy without the necessity of menial service. The reader will find many more elevating ideas in the book a perusal of which will be found instructive as regards the change of society contemplated by the socialist thinkers of the day. Nevertheless, as to the feasibility of the scheme set forth with all the arts of the imaginative novelist, doubts and objections are in order, as the reader may find out by himself. A. H.

The *Art Amateur* for June has no very long articles, but a great variety of technical articles and notices of exhibitions.

Montezuma's note-book contains a great deal about what might be called the commercial side of art; and if "the pleasure is as great in being cheated, as to cheat," pictures must give a great deal of pleasure to both parties if we trust his stories. In fact, a picture should be so truly ours that it is inestimable, or it is hardly worth the having.

We are glad to learn that the Prize Fund Exhibition gives evidence of originality of thought and nationality of feeling among American artists. We are also pleased to hear of a really good ideal statue, Resignation, by Mr. Keyser, for the tomb of ex-President Arthur. The design is a standing female figure.

A favorable notice is given of a pastel exhibition. This style of art is very graceful and pleasing, but we fear it encourages that tendency to sketchy work too common among our painters and cultivates a taste for the merely pretty that does not lead to real progress.

One of the best articles is on Miniatures, and as it is numbered one we trust there are others equally good to follow. This charming style of portrait is now reviving among us and work that Holbein thought not unworthy of him, need not belittle any one. Another article treats of marine painting in water colors. The continuation of the article on pen drawing gives more technical directions than the first number, but the illustrations are less pleasing. An article on amateur photography and many designs for furniture and fancy with the usual correspondence complete the contents of this valuable number. E. D. C.

THE LOST MANUSCRIPT.*

BY GUSTAV FREYTAG.

CHAPTER XXXVII. — Continued.

The Sovereign turned to the Lord High Steward.

"I am surprised to find your Excellency here," he said; "I did not know that you too had taken leave of absence for this quiet life."

"My gracious master would have been surprised if I had not done my duty. It was my intention to have reported to your Highness to-day at the palace concerning the health of the Princess."

"So it was for that," said the Sovereign. "I had forgotten that my Lord High Steward is never weary of his office of guardian."

"An office that one has exercised almost half a century in the service of the illustrious family becomes in fact a habit," replied the High Steward. "Your Highness has heretofore judged with kind consideration the zeal of a servant who is anxious to make himself useful."

The Sovereign turned to the Marshal, and asked, in a suppressed voice:

"Will he remain?"

The Marshal replied, distressed:

"I could obtain no promise, nor even a wish from him."

"I knew it already," replied the Sovereign, hoarsely. He turned to the Professor, and violently forced himself to assume a friendly demeanor, as he said: "I have heard from my daughter of your campaign against broken chairs. I wish to have some talk with you alone about it."

They sat down to table. The Sovereign gazed vacantly before him, and drank several glasses of wine; the Princess also sat silent, the conversation flagged, the High Steward alone became talkative. He asked about a bust of Winkelmann, and spoke of the lively interest which the nation took in the fate of their intellectual leaders.

"It must be an agreeable feeling," he said, politely, to the Professor, "to be in a certain measure under the protection of the whole civilized world. In the majority of cases the private life of our great men of learning passes away uneventfully, but our

* Translation copyrighted.

people delight in occupying themselves with the course of life of those who have departed. If happy accident brings a person into contact with gentlemen of your standing, he must take care that he does not suffer for all eternity under the hands of later biographers. I confess," he continued, laughing, "that a fear on this point has robbed me of many interesting acquaintances."

The Professor answered, quietly:

"The people are conscious that they have by the labor of scholars first been raised from misery; but with greater experience in political life, their interest in the promoters of our present culture will assume more moderate proportions."

"I have told the Sovereign that you have found something here," remarked the Princess, across the table.

"There has been a remarkable discovery made in an ancient sepulchre," interrupted the High Steward; and he gave a diffuse account of a funeral urn.

But now the Sovereign himself turned to the Scholar.

"Surely you may hope to find the rest?"

"Unfortunately, I do not know where to search further," replied the Professor.

"What you have found, then," continued the Sovereign, with self-control, "is unimportant."

It did not please the Professor that the conversation should again turn upon the manuscript; he felt annoyed at having to talk about his Romans.

"It is a few chapters from the sixth book of the Annals," he replied, with reserve.

"When your Highness was at Pompeii," interposed the High Steward, "the inscriptions on the walls attracted your attention. In those days a beautiful treatise upon the subject came into my hands; it is fascinating to observe the lively people of lower Italy in the unrestrained expression of their love and their hatred. One feels oneself transplanted as vividly into the old time by the naïve utterances of the common people, as if one took a newspaper in one's hand that had been written centuries ago. If any one had told the citizens of Pompeii that at the end of eighteen centuries it would be known who they, in accidental ill-humor, had treated with hostility, they would hardly have believed it. We indeed are more cautious."

"That was the hatred of insignificant people," replied the Sovereign, absently. "Tacitus knew nothing of that, he only concerned himself about the scandal of the court. Probably he also held office."

The Princess looked uneasily at the Sovereign.

"Is there anything in the contents of the parchment leaves which would be interesting to us ladies?" she said, endeavoring to turn the conversation.

"Nothing new," replied the Scholar. "As I had the honor of telling your Highness, the same passage was already known to us from an Italian manuscript: it is about small events in the Roman senate."

"Quarrels of the assembled fathers," interposed the Sovereign, carelessly. "They were miserable slaves. Is that all?"

"At the end, there is another anecdote of the last years of Tiberius. The disturbed mind of the prince clung to astrology: he called astrologers to him to Capri, and caused those to be cast into the sea whom he suspected of deceit. Even the prudent Trasyllus was taken to him over the fatal rock path, and he announced the concealed secret of the Imperial life. Then the Emperor furtively asked of him whether he knew what would happen to himself that day? The philosopher inquired of the stars, and called out, trembling: 'My situation is critical; I see myself in danger of death.' At this passage our fragment breaks off. The incident may have been repeated—the same anecdote attaches to more than one princely life."

A couple of daws flew round the battlements of the tower, they cawed and screamed, and told one another that underneath there stood a sportsman who was seeking his game. The Sovereign suddenly arose.

"There must be an end to the screaming of these birds."

He beckoned to the forester. The man approached, and placed a weapon in his hands. The Sovereign placed the but-end on the ground and turned to the Professor, while the Princess, disquieted by the last words of the Scholar, stood aside with her suite, struggling for composure.

"The Princess has told me," began the Sovereign, "that you have some hesitation as to fulfilling a wish that we have all much at heart. I hope that the hindrances may not be insurmountable."

"It becomes me," replied the Professor, delighted by the kind words of the Sovereign, "to weigh calmly so honorable a proposal. But I have other things to take into account besides the cause of learning."

"What others?" asked the Sovereign.

"The wish of a loved wife," said the Professor. A sudden convulsion shook the limbs of the Sovereign.

"And how do you consider your relations to me?" asked the Sovereign, in a hoarse voice.

The Scholar looked at the man, from whose eyes darted a look of deadly hatred and malignity. He saw the muzzle of the weapon directed toward his breast, and the raised foot of the Sovereign feeling for the trigger. The flash of lightning impended, there was no room for flight, no time for movement; the thought of the last moment passed through his mind. He saw before him the distorted countenance of the Emperor Tiberius, and he said, in a low voice:

"I stand on the verge of death."

"The Sovereign is sinking," called out the High Steward.

He threw himself with outstretched arms towards his master, and seized his hands. The Sovereign tottered, the weapon fell to the ground, he himself was received in the arms of those who hastened toward him. The Princess flew up to them, and looked inquiringly into the pale face of the Scholar.

"The Sovereign has been attacked by a sudden dizziness," answered the latter calmly.

"My master is losing consciousness," cried the High Steward. "How are you, Mr. Werner?"

The hands of the old man trembled.

The Sovereign lay senseless in the arms of his attendants, and was carried to the castle.

The by-standers expressed with much concern their terror at the event and the Princess hastened after the stricken Sovereign. Before the High Steward followed, he said to the Professor, whilst giving him a searching look:

"It is not the first time that the Sovereign has been taken ill in such a manner. Was that a surprise to you? You did not know that the Sovereign was suffering in this way?"

"I know it to-day," replied the Scholar, coldly.

A few minutes afterwards the High Steward entered the room of the Professor, who was preparing for his journey.

"I come to beg your indulgence," began the High Steward; "for I must trouble you with an acknowledgment which is painful to me. You have talked much lately in my presence to the Sovereign of the Cæsarian madness of the Roman emperors. What you then said was very instructive to me."

"I now find," replied the Professor, gloomily, "that the place was ill chosen."

"More than you assume," replied the courtier, drily. "To me it was peculiarly instructive, but not so much what you said as that you said it. I should not have thought it possible that any one would so acutely reason upon the past, and so completely give up all judgment of that which was around him. You then told a sick man the story of his own disease."

"I have just discovered that," replied the Scholar.

"The Sovereign is diseased in mind. It is now necessary that you should know it. I have a second confession to make to you. I discover that I have misjudged you."

"I shall be glad if your present opinion is more favorable to me than the former one," replied the Professor, with dignity.

"In your point of view, yes," continued the High Steward. "I have for a long time regarded you in your relations here as a cautious man, who was cleverly following out his objects. I have learnt that you are not that, but something different."

"An honorable man, your Excellency," replied the Professor.

"We have nothing to reproach one another with," rejoined the courtier, bowing; "as you misjudged the Sovereign, so did I misunderstand you; but my mistake is the greater, for I am an older man, and I have not the excuse of a specially intellectual mind, which sometimes makes it difficult for a man to judge correctly of other natures. But we have both one excuse. It is seldom easy to form a just estimate of those who have grown up in other circles, and show a different combination of virtues and weaknesses. We are all liable to be confused in our judgment, according as our self-respect is satisfied or wounded. Where genial tendencies find no response, displeasure erects a barrier; and where powerful tones echo sympathetically to one's breast, there is the danger of too rapid intimacy. Thus I have put too low a value on your honorable openness and candor. I now pay the penalty, for I have to confide to you a secret that I have no doubt you will accept with proper regard."

"I assume that your Excellency does not make this communication to me without a specific cause."

"There is a plan for keeping you in our city," interposed the High Steward.

"Proposals of this nature have been made to me since yesterday."

The High Steward continued: "It is not necessary for me to be anxious about your answer. You have learnt the meaning which is concealed under a veil of civility. Do you know why the Sovereign made you the proposal?"

"No; up to this morning I have not doubted that a certain personal feeling of kindness, and the view that I might be useful here, were the motives."

"You are mistaken," replied the High Steward. "It is not a wish to keep you here merely for passing private interests. The real motive is, as appears to me, the freak of a diseased mind, which sees in you an opponent, and fears a sharp-sightedness that will remorselessly disclose to the world a diseased spirit. You were to be fettered here; you were to be cajoled, watched, and persecuted. You are an object of interest, of fear, and of aversion."

The Professor rose.

"What I have experienced and what you tell me compel me to leave this place instantly."

"I do not wish," said the High Steward, "that you shall depart from here with displeasure, if this can be avoided; both on your own account and for the sake of many of us."

The Professor went to the table, on which lay the parchment leaves.

"I beg your indulgence if I do not regain my composure immediately. The situation in which we are placed is like that of a distant century; it stands in fearful contrast to the cheerful security with which we are wont to consider our own lives and the souls of our contemporaries."

"Cheerful security?" asked the High Steward, sorrowfully. "In courts, at least, you must not seek this, nor under any circumstances in which the individual passes out of private life. Cheerful security! I must ask whether we have it in this century? It would be difficult to find a time in which there is so much that is insecure; in which the old is so decayed, and the new so weak."

The Professor raised his head, astonished at the bitter complaints of the old man. The High Steward continued, indignantly:

"I hear everywhere of the hopes that one has in the nation, and I see an abundance of young student-like confidence. There is not much mature power, and I do not blame a sanguine man if he places his hopes on it; nay, I even admit that this youthful spirit is in fact the best hope that we have. But I am an old man; I cannot among these novelties find anything that commands my respect, where they affect the interests of private life. I feel the decay of vital power in the air which surrounds me. My youth belonged to a time when the best culture of the nation was to be found at Court. My own ancestors have for six centuries taken an eager part in the follies and crimes, and also in the pride, of their times; and I have grown to be a man in the conception that princes and nobles were the born leaders of the nation. I see with sorrow that they have for long, perhaps for ever, lost this lead. Much of what you lately said exactly coincides with the last decades that I have passed through. It has been a sorrowful time; the hollow weakness in the life of the people has in a great measure deteriorated the higher classes. But there has not been altogether a deficiency of honorable and powerful men. What time has been entirely without them? But what should be the noblest blossom of the national strength is just what in this empty shallow time is most deeply diseased."

The Professor interposed:

"It is a cause for sorrow; but where, perhaps, the individual loses, the whole gains?"

"Undoubtedly not," replied the courtier; "if only the gain to the whole was certain. But I see with astonishment that the greatest concerns of the nation are carried on, on all sides, with school-boyish pettiness. Much that is valuable is lost; nothing better is gained. The delicacy of feeling which formerly expressed itself beneficially in all forms of intercourse, and the discreet management of important affairs, become rare. If these advantages did not suffice to form the character, as is perhaps needed in the present, they made life pleasing and beautiful. A secure feeling of superiority, and a gracious rule over others, was general at courts and in business; of this we are deprived. Diplomacy has ceased to be distinguished. One sets bluntly to work; not only nobleness of feeling, but even the pleasing show of it is wanting; an uncertain pettiness, a grumbling, irritable, reserved character has gained the upper hand at courts, and in diplomacy ill-bred frivolity, without knowledge and without manly will. Our princes rattle about like accoutred idlers; the old court discipline is lost, and one feels oneself incessantly on the defensive, and seeks for safety in senseless attacks. It is impossible not to feel that by these acts one is irretrievably going downward."

The Professor smiled at the sorrow of the old lord.

"I do not blame you," continued the High Steward, "if you do not feel the misfortune of this change as deeply as I do. It is only a pity that it should always be the highest earthly interests which are thus trifled with."

"But is this misfortune so general?" replied the Professor.

"Some splendid exceptions have not been wanting," said the High Steward; "some were granted us at a time when we played the greatest tragedy before the world, as if here and there to preserve a bright romance. They have scarcely been wanting in a country which possesses the five qualities which are necessary to form a good court: an upright sovereign, an amiable princess, a high-minded statesman, some intellectual court ladies, and a superior spirit among the cavaliers. But these requisites are seldom found."

"Were they ever frequent?"

"They were the pride of our nation at the time from which my earliest recollections date," replied the High Steward.

"Just at this time we gained something else of which we may still be proud," rejoined the Scholar. "There was a short period during which the Court became the home of the most liberal culture of the time, and it was only through the rare political circumstances of our nation that this leadership was possible. Now it has passed into other circles, and we have exchanged the increased capacity of many for the distinguished culture of individuals."

(To be continued.)

Green be the turf above thee,
Friend of my better days;
None knew thee but to love thee,
Nor named thee but to praise.

—*Ben Jonson.*

GEMS FROM THE GERMAN.

TRANSLATED BY MARY MORGAN (GOWAN LEA).

IV.

[Adapted from an Old Song.]

Where is now my poet gone,
Who upon the prairie
Sat and sang to me alone—
Me—his forest fairy?
"Maiden, dost thou ask me why
Godlike genius should die?"

V.

IN GERMANY'S BEAUTIFUL LAND.

In Germany's beautiful land,
Full many a poet hath sung,
The singers are dead in the sand,
Their lyres are all broken, unstrung.

But long as the stars shall go round,
And illumine this dark earthly sphere;
So long shall sweet voices be found,
To charm us with poetry here.

The homes of the heroes shall fall,
In mouldering ruin lie low;
But from the old mansion or hall,
A lovely new Spring-tide shall go.

—*Eichendorff.*

VI.

MY WISH.

I often wish my life were free,
That I from men might hie away,
O'er rivers calm glide pleasantly,
'Neath quiet skies of softest gray:

Where birds might flit about my feet,
And worldly strife no more pursue;
The elements to rock and greet
Me, laving me in pearly dew:

Where, sailing close by pebbly beach
(Without forsaking my light bark),
The wild rose-bud I still could reach,—
Then rove again, blythe as the lark.

The grazing herds on distant hills,
The freshly springing flowers of May,
The purpling grapes, the purling rills,
The fragrance of the new-mown hay;—

All these I'd view in purest light—
A ray that ever clearer seems;
At Nature's fountains, cooling, bright,
I'd quaff,—and dream but happy dreams.

—*Von Platen.*

CORRESPONDENCE.

THE IDEA OF GOD.

To the Editor of THE OPEN COURT:—

To INQUIRE, in a spirit of truth, into the history of the different ideas of God, formed by different men, at different times, is surely worthy of the highest powers of man's intellect. But you will kindly allow me to say, with sincere respect, that our idea of God is one thing, God Himself is quite another. Granted, that our ideas are concrete and abstract, universal, particular, transcendental, adequate or inadequate, etc., we cannot possibly have an adequate idea of God in the sense of comprehension, for an adequate idea "includes not only all that is of the essence, but all accidents and relations of its object." We can never in this world or the next *comprehend* God. For He is infinite, we are finite.

Moreover, it is not surely a legitimate argument to say that different men at different times have had ridiculous, grotesque, *manifestly* absurd ideas of God, therefore there is no God, Creator and Ruler of the Universe who will reward or punish.

Again the argument of modern men of science is surely not legitimate since they can present no more than a comparatively scanty knowledge of the component parts in nature, and of the action of the parts separately and collectively. Such is astronomy, such biology, such geology, and so on.

The parts, and the action of the parts, in nature, is one thing: the origin or first cause of nature is quite another.

Back of the origin of species by natural selection, is the origin and nature of life.

It will not do for them to argue with intelligent men, saying, we know the parts and the action of which nature is *made* up, therefore it is *not made* by God. MICHAEL CORCORAN.

LINCOLN, NEB.

[The remarks of Mr. Corcoran were suggested by a "careful reading" of the pamphlet "The Idea of God" and various editorial articles in the columns of THE OPEN COURT. A reference to the essay "Phenomena and Noumena," No. 82, will sufficiently explain the difficulty that "our idea of God is one thing, God Himself another." The nature of *comprehension* is discussed in "Is There Anything Unknowable in Causation," No. 59. The argument attacked in the second paragraph was never advanced by THE OPEN COURT.—ED.]

NOTES.

Scribner's for July will contain a number of short and entertaining stories. The idea is to issue a "Fiction number for Midsummer reading."

M. Alfred Binet promises, before long, to contribute to our journal a series of papers on the Psychology of Unconsciousness. The articles will undoubtedly contain many new and important suggestions.

Prof. Holden's article in this month's *Himmel und Erde* is accompanied by beautiful photographic representations of the first and last quarters of the moon. The photographs were taken with the great telescope at the Lick Observatory.

Our correspondence relative to the Single-Tax question increases. The publication of the majority of the communications has necessarily been delayed. We promise our correspondents that extracts, at least, from those letters will be published that touch upon points not already discussed.

In Mr. Paul Shipman's article, "Of Christianity and Agnosticism," published in our last issue, the following typographical errors are to be corrected. Page 1667, first column, fourth line, read *transformations* instead of *confirmations;* fourteenth line, ibid., *attitude* instead of *attribute;* and p. 1668, first column, last line, *in favor of* instead *in form of*.

The New Review, the first number of which is now out, seems destined to eclipse many a more pretentious contemporary. Its merits are brevity and cheapness; it contains ninety-six pages of printed matter and costs but 15 cents a copy ($1.75 a year). The contributors are prominent publicists, and the subjects of vital interest in politics, science, and art. It is a magazine of the highest order and within the reach of all. (Editor, Mr. Archibald Grove; publishers, Longmans, Green & Co., London and New York)